

Serial No. 10/687,457
Amdt. dated Mar. 23, 2010
Reply to Office action of Sept. 23, 2009

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (cancelled)
2. (currently amended) An apparatus according to claim 11 ~~claims 1~~, wherein the ~~cylinder/piston~~ at least one hydraulic cylinder piston unit comprises ~~the combination of~~ two vertically aligned hydraulic cylinder piston units ~~cylinder/piston elements~~ ~~(10')~~.
3. (currently amended) An apparatus according to claim 11 ~~1~~, and further comprising means ~~for~~ for adjusting and controlling an expansion volume for said pressure-baked product within said heatable mold.

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4. (currently amended) An apparatus according to claim 11 ~~1~~, and further comprising means for controlling the retraction velocity of said cylinder piston unit from said ~~resp. said~~ lower punch plate ~~(4) relative to the expansion speed of said pressure-baked product.~~

5. (currently amended) An apparatus according to claim 11 ~~1~~, wherein said at least one cylinder piston unit ~~comprises~~ including an upper oil port ~~(21)~~ and a lower oil port ~~(22)~~, and two respective oil lines connecting said oil ports alternately to a high pressure oil source and to an oil return reservoir of a hydraulic power system of ~~the~~ said apparatus, said two oil lines passing through a valve unit capable of simultaneously switching the oil lines alternately to a high pressure oil feed ~~(pump) connection pump~~ and to an oil return reservoir ~~(reservoir) connection.~~

6. (currently amended) An apparatus according to claim 11 and further ~~1~~, comprising a hydraulic power control and steering ~~means acting on a hydraulic power system (11,16,17) linked~~ system operatively associated with said cylinder piston unit ~~(10)~~ and ~~on~~ an actuating means ~~(8)~~ for moving said peripheral

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mould ~~(6)~~, thereby enabling of independently moving and positioning, incl. temporary holding and/or pressing, the lower punch ~~(4)~~ and peripheral mould ~~(6)~~ relative to the fixed upper mould plate ~~(1)~~ and to one another, wherein the said cylinder piston unit is displaced in a desired direction over a predetermined stroke length by oil flow under pressure acting selectively on either side of said cylinder piston unit, said pressure pressurized oil flow ~~being~~ is delivered from said hydraulic power control and steering system by selective actuation and positioning of a multi-position valve, through which ~~are passing~~ passes a first oil feed line to an upper chamber of ~~the~~ said hydraulic piston cylinder unit piston and a second return oil flow line from a lower chamber of ~~the~~ said hydraulic piston cylinder unit piston, said two oil flow lines ~~being~~ are adapted to be selectively switched to ~~pressure oil feed and/or pressurize or return hydraulic fluid~~ flow according the ~~control~~ position of said multi-position valve.

7. (withdrawn) A method of manufacturing puffed food crackers of desired shape and texture by using an apparatus as defined in claim 1, said method comprising the steps of: feeding of a given amount of starch-containing raw material in a mould

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cavity formed by the heated punch and the peripheral mould, compressing and baking the material by moving the punch and peripheral mould upwards against the heated upper mould plate incl. holding the punch under pressure by means of the lower cylinder piston, optionally carrying out at least one intermediate partial expansion by releasing the punch downwardly for a desired small amount and time followed by at least one recompression by moving the punch upwards, expanding the pressure-baked material to a desired extent by quickly withdrawing the punch over a given distance within the mold cavity and keeping the punch a desired short time in this position, optionally slightly recompressing the expanded cracker for its thickness equalization, moving the punch and peripheral mould downwardly so as to completely open the mould cavity and render the expanded cracker free resting on the punch top surface, and discharging the expanded cracker from the punch.

8. (withdrawn) A puffed food cracker directly obtained by the method of claim 7.

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9. (withdrawn) A puffed food cracker according to claim 8, having the form of a mini cake with concave or convex surfaces, optionally including coarse dimples.

10. (withdrawn) A puffed food cracker according to claim 8, having the form of a thin chip of irregular tridimensionally bended shape of constant or varying thickness.

11. (new) An apparatus for making puffed crackers from a starch-containing raw material by pressure-baking and expanding the raw material within a heated mould, said apparatus comprising:

a) a heatable stationary upper mould plate having extending therefrom at least one downwardly directed upper die element, said upper mould plate is adapted to be adjustably fixed to an upper frame end of said apparatus;

b) a heatable lower mould plate having at least one upwardly directed die or punch element arranged in registry with said at least one downwardly directed upper die element, said lower mould plate is adapted to be moved upwardly and downwardly relative to said stationary upper mould plate and having a carrier member movable therewith;

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c) an optionally heatable intermediate mould plate disposed between said upper mould plate and said lower mould plate and having at least one die hole arranged in registry with said upper die elements and said lower punch elements, said intermediate mould plate is adapted to be moved upwardly and downwardly relative to said upper mould plate and said lower mould plate such that either one or both of said upper dies and lower punches are caused to be slidably received in said die holes so as to define mould cavities therein;

d) means for driving and expanding said heated mould, said driving and expanding means is directly connected to said lower mould plate for moving the same and comprises at least one hydraulic cylinder piston unit mounted beneath said lower mould plate, said at least one hydraulic cylinder piston unit having a drive shaft connected to said carrier member of said lower mould plate and said drive shaft and carrier member are disposed vertically in line and with the longitudinal axis of said apparatus; and

e) said hydraulic piston cylinder unit having stepped interior chambers of different volume to selectively vary the flow of hydraulic fluid therefrom whereby the velocity of the cylinder piston unit is caused to be moved in a downward

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direction at a rate greater than in an upward direction

following baking of raw material within said heated mould.